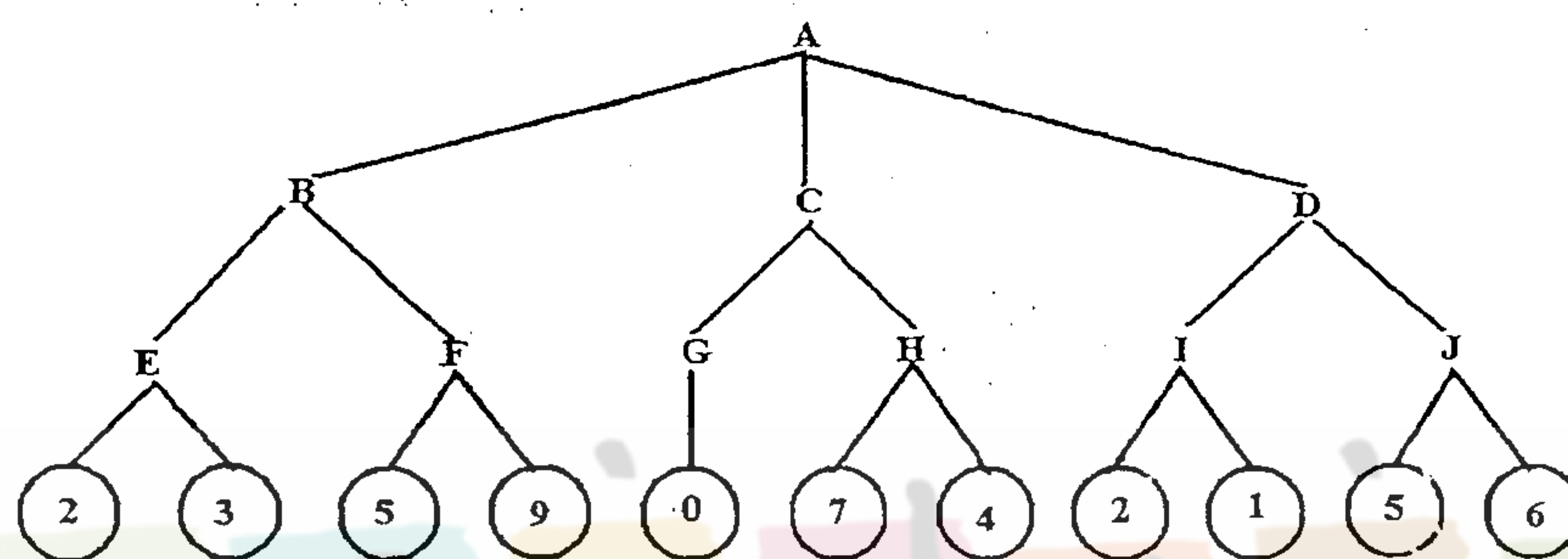


(3 Hours)

[ Total Marks : 100

- N. B. : (1) Question no. 1 is compulsory.  
(2) Attempt any four Questions out of remaining six questions.

1. (a) What is propositional logic? Explain with an example. 7  
(b) Explain simple reflex agent architecture. 7  
(c) What is reasoning? What is its role in artificial intelligence 6
2. (a) Explain PEAS representation with example. 8  
(b) Perform  $\alpha$ - $\beta$  cutoff on the following: 12



3. (a) Measure 3 and 4 liters of milk when jugs of size 7 and 2 are available. 10  
(b) Explain Hill Climbing. 10
4. (a) Using predicate logic find the course of Shyam's liking for the following: 10  
(i) Shyam only likes easy courses.  
(ii) Computer courses are easy.  
(iii) Electronics courses are hard.  
(iv) DSP is an electronics course.  
(v) Programming is a computer course.  
(b) Compare Forward and Backward reasoning with suitable example. 10
5. (a) Explain the role of probabilistic reasoning in medical diagnostic 10  
(b) Explain A\* Algorithm. Where is it used? 10
6. (a) What is Ontology? Explain a real world example and its use. 10  
(b) Design a multilayer feed forward network of neurons to add 2 2-bit numbers and generate result and carry 10
7. Write short notes on any 4 out of the following: 20  
(a) Iterative deepening search  
(b) Properties of a heuristic function and its role in AI.  
(c) Conditional Probability.  
(d) Uncertainty  
(e) Role of NLP in AI.